REMARKS

Claims 1-34 are pending in this application. Claims 1, 4, 7, 10, 13, 16, 18, 20 and 23-34 are independent. In light of the amendments and remarks included herein, Applicant respectfully requests reconsideration and withdrawal of the outstanding rejections.

Applicant wishes to thank the Examiner for indicating that claims 3, 6, 9, 12, 15, 17, 19 and 22 include allowable subject matter.

In the outstanding Official Action, the Examiner rejected claims 25-28 and 31-34 under 35 U.S.C. §101; and rejected claims 1, 2, 4, 5, 7, 8, 10, 11, 13, 14, 16, 18, 20-21 and 23-24 under 35 U.S.C. §103(a) as being unpatentable over *Harrington* (USP 6,539,125). Applicant respectfully traverses these rejections.

Claim Rejections – 35 U.S.C. §101

The Examiner rejected claims 25-26 and 31-32 under 35 U.S.C. §101 asserting they are directed to non-statutory subject matter. The Examiner notes that these claims recite a "program product to have a computer execute..." By this amendment, Applicant has amended the claims to more appropriately recite the present invention. It is respectfully submitted that these amendments are being made without conceding the propriety of the Examiner's rejections, but merely to timely advance prosecution of the present application.

In addition, Applicant has amended claims 27-28 and 33-34 as suggested by the Examiner to recite a computer-readable medium.

Based on these amendments, Applicant respectfully requests the outstanding rejection withdrawn.

Claim Rejections – 35 U.S.C. §103

In support of the Examiner's rejection of claim 1, the Examiner asserts that *Harrington* discloses all of the elements of the claim, including removing means for removing, from said

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received N pixel values, first to ((N-1)/2)th pixel values as sorted in accordance with a prescribed order, citing to col. 3, lines 41-45 and lines 55-58. The Examiner asserts *Harrington* discloses "sample intensity values are sorted highest to lowest or vice versa and by selecting ... the number corresponding to 2N-1, the invention of *Harrington* is removing the first to ((N-1)/2)th pixel values as disclosed in the limitations of the claim..." The Examiner appears to be asserting that *Harrington*'s removal of 2N-1 pixel values teaches removing the first to ((N-1)/2)th pixels values. Applicant respectfully disagrees with the Examiner's characterization of this reference.

In order to sustain a rejection under 35 U.S.C. § 103(a), it is respectfully submitted that the Examiner must meet his burden to establish a *prima facie* case. "To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations." *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claim 1 recites a filtering apparatus calculating a median of N pixel values arranged in a two-dimensional area of K*K (K is an odd number not smaller than 3) of a digitized image, comprising receiving means for receiving said N pixel values; removing means for removing, from said received N pixel values, first to ((N-1)/2)th pixel values as sorted in accordance with a prescribed order; and sorting means for outputting, among (N-(N-1)/2) pixel values remaining after removal of the pixel values by said removing means, first pixel value as sorted in accordance with said prescribed order as said median

In contrast, the disclosure of *Harrington* is directed to a modified median filter that better preserves textures when filtering noise out of an image.

At col. 3, lines 33-40, *Harrington* discloses as follows:

> In a preferred embodiment, the neighborhood is centered on the object pixel. As the filter 32 scans across the image, successive pixels are designated as the object pixel.

Additionally, in a preferred embodiment, **the dimensions of the neighborhood are N pixels by N pixels, where N is a whole number (e.g., 3, 4, or 5). Where the object pixel is perfectly centered in the neighborhood, N is an odd number.** Ultimately, the dimensions of the neighborhood are defined by the dimensions of the filter 32 and are optionally adjustable as the filter 32 is tuned for a desired application or a particular image. (emphasis added)

At col. 3, lines 41-45, *Harrington* discloses as follows:

In a preferred embodiment, at step 110, the sampled intensity values are sorted according to their relative luminescence (i.e., from highest to lowest or vice versa). From the sorted intensity values a number are selected, at step 120, which are closest to the intensity value of the object pixel.

Further, at col. 3, lines 55-58, *Harrington* discloses as follows:

Alternately, in a preferred embodiment, where the dimensions of the filter 32 are N pixels by N pixels, the number selected in less than or equal to 2N-1. This threshold level ensures that textures as fine as one pixel in width are preserved.

As can be seen from these teachings, *Harrington* discloses that the 2N-1 pixel values are selected. These selected values are closest to the intensity value of the object pixel. The farthest values from the object are discarded. The neighborhood in *Harrington* includes N pixels by N pixels, where N is a whole number.

However, claim 1 clearly recites removing means for removing, from said received N pixel values, first to **((N-1)/2)th pixel values** as sorted in accordance with a prescribed order, where N is the number of received pixel values which are arranged in a dimensional area of K*K.

The Examiner appears to be equating the N value in *Harrington* with the K value recited in the claim. As such, in comparing *Harrington* to the claimed invention, *Harrington* selects 2N-1, or (entire neighborhood – 1). The apparatus in claim 1 **removes** ((entire neighborhood – 1)/2). As such, 2N-1 is **NOT** equivalent to N-1/2. Further, claim 1 **removes** the calculated pixel values while *Harrington* does the opposite and **selects** the calculated pixel values.

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The Examiner admits *Harrington* does not expressly disclose removing from the N pixel values only the first to $((N-1)/2)$th pixel values and selecting the first pixel value of the remaining $(N-(N-1)/2)$ pixel values as the median. However, the Examiner asserts that because the output is identical, it would have been obvious to remove the calculated pixel values and select from the remaining pixel values as claimed. As noted above, clearly the outputs are not identical as the number of pixels that are discarded in *Harrington* are not identical to the number of pixels removed in the claimed invention. As *Harrington* fails to teach or suggest all of the claim elements, Applicant respectfully submits that the Examiner has failed to establish *prima facie* obviousness. For at least these reasons, Applicant respectfully requests that the outstanding rejection be withdrawn.

It is respectfully submitted that claims 2-3 are allowable for the reasons set forth above with regard to claim 1 at least based on their dependency on claim 1.

In addition, claim 4 recites "removing means for removing, from said received N pixel values, $((N-1)/2+2)$ to Nth pixel values as sorted in accordance with a prescribed order; and sorting means for outputting, among $(N-(N-1)/2)$ pixel values remaining after removal of the pixel values by said removing means, $(N-(N-1)/2)$th pixel value as sorted in accordance with said prescribed order as said median." The Examiner relies on the same citations to support his assertions that *Harrington* renders claim 4 obvious. However, as analogously discussed above, *Harrington*'s selection of 2N-1 pixel values does not teach or suggest, or provide the same results as, the claimed $((N-1)/2+2)$ to Nth pixel values. As *Harrington* fails to teach or suggest all of the claim elements, Applicant respectfully submits that the Examiner has failed to establish *prima facie* obviousness. For at least these reasons, Applicant respectfully requests that the outstanding rejection be withdrawn.

As claims 7, 10, 13, 16, 18, 20 and 23-34 include the claim elements discussed with regard to claim 1 or 4, Applicant respectfully submits that *Harrington* fails to render any of the pending claims obvious.
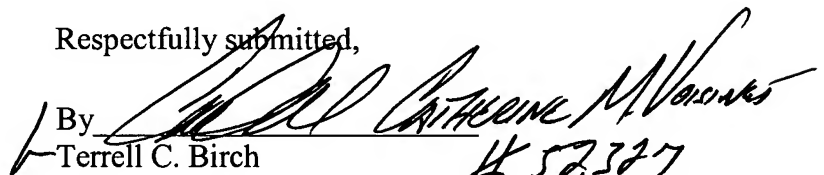
Conclusion

In view of the above remarks, it is believed that claims are allowable.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Catherine M. Voisinet Reg. No. 52,327 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By

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